

## WHAT IS CLAIMED IS:

1. An optical filter comprising a slanted Bragg grating inscribed in an optical fiber portion comprising a core having a refractive index  $n_1$  and a radius  $R_{\text{core}}$  and a  
5 cladding having an average refractive index  $n_2$  lower than  $n_1$  and a radius  $R_{\text{cladding}}$ , the core and the cladding of the fiber being doped with a photosensitive dopant in the fiber portion comprising the Bragg grating, which filter is characterized in that, in the fiber portion comprising  
10 the Bragg grating, the photosensitivity of the cladding is greater than the photosensitivity of the core and the cladding includes an index step area having a refractive index  $n_3$  greater than  $n_2$  and less than  $n_1$ , said index step area having a width  $L$  defined by an inside radius  $R_{s1}$   
15 greater than or equal to the radius  $R_{\text{core}}$  of the core and an outside radius  $R_{s2}$  less than or equal to the radius  $R_{\text{cladding}}$  of the cladding.
2. An optical filter according to claim 1, characterized  
20 in that the index difference between the core and the cladding ( $\Delta n_{\text{core}} = n_1 - n_2$ ) is in the range 0.003 to 0.006.
3. An optical fiber according to claim 1, characterized  
25 in that the index difference between the cladding and the index step area ( $\Delta n_{\text{step}} = n_3 - n_2$ ) is in the range 0.0004 to 0.001.
4. An optical filter according to claim 1, characterized  
30 in that the width of the index step area ( $L = R_{s2} - R_{s1}$ ) is in the range 4  $\mu\text{m}$  to 20  $\mu\text{m}$ .
5. An optical filter according to claim 1, characterized  
35 in that the inside radius  $R_{s1}$  of the index step area of the cladding is in the range from the radius  $R_{\text{core}}$  of the core of the fiber to  $R_{\text{core}} + 10 \mu\text{m}$ .
6. An optical gain flattening filter including an optical

filter comprising a slanted Bragg grating inscribed in an optical fiber portion comprising a core having a refractive index  $n_1$  and a radius  $R_{\text{core}}$  and a cladding having an average refractive index  $n_2$  lower than  $n_1$  and a radius  $R_{\text{cladding}}$ , the core and the cladding of the fiber being doped with a photosensitive dopant in the fiber portion comprising the Bragg grating, which filter is characterized in that, in the fiber portion comprising the Bragg grating, the photosensitivity of the cladding is greater than the photosensitivity of the core and the cladding includes an index step area having a refractive index  $n_3$  greater than  $n_2$  and less than  $n_1$ , said index step area having a width  $L$  defined by an inside radius  $R_{s1}$  greater than or equal to the radius  $R_{\text{core}}$  of the core and an outside radius  $R_{s2}$  less than or equal to the radius  $R_{\text{cladding}}$  of the cladding.